Information File and Frequently Asked Questions List

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means New to this version

back to 8-track Heaven

Compiled by Malcolm Riviera with excellent assistance from Abigail Lavine, Our Lady of the 8-Tracks (abbot@pobox.com), Eric Wilson (ewilson@nr.infi.net) and Ronald Bensley (RBensley@gnn.com) and many others. Please send all additions, corrections, and suggestions to Malcolm Riviera at 8track@8trackheaven . Special thanks to Russ Forster for allowing me to lift freely from his fine publication "8-Track Mind" for many of the answers found below. Answers taken directly from the pages of "8-Track Mind" are denoted by [8TM - author name] at the beginning of the answer.

This file is intended to provide a general information base and answer some frequently asked questions about 8-track tapes and other analog audio formats that are discussed on alt.collecting.8-track-tapes. It is hoped that this file will be useful to newcomers to the group and help fill in information gaps in the minds of experienced trackers.

Table of Contents

1. 8-track tapes on Internet? Are you kidding?
2. Who invented the 8-track tape?
3. A. When did they stop making 8-tracks?
   B. Why did they stop making 8-tracks?
   C. Were 8-tracks popular internationally, or only in America?
4. What is "8-Track Mind"?
5. How does an 8-track work, anyway?
6. Where can I buy 8-track tapes and players?
7. How can I fix broken 8-tracks?
   A. Foam backing pads on tapes
   B. Metallic sensing strip
   C. How can I open the cart without damaging it?
   D. How to Open an Ampex/Lear Jet Cartridge.
   E. Is there any hope for an 8-track in which all of the tape is just in a big pile (untangled)? Is there any way to spin it back on the reel?
   F. How do I fix tension problems? (a.k.a. Tape Binding)
   G. My tape jammed in the player -- now part of the tape is crinkled like an accordion. Can I fix it?
   H. My tape has "wow and flutter." What can I do?
   I. How thick should replacement pads be?
   J. Some of my tapes drag...
   K. Opening tapes is a nightmare waiting to happen!
8. Can I sell my 8-track tapes on alt.collecting.8-track-tapes?
9. What about that 8-track movie....?
10. Are my 8-tracks rare or valuable? How can I tell how much they're worth?
11. Why do 8-tracks break and/or jam so easily?
12. What is that black gunk where the pinch roller should be?
13. Was any punk rock released on 8-track?
14. What's the deal with quadraphonic 8-tracks?
15. What about 4-track tapes?
16. What about the 8-track tape WWW site, "8-Track Heaven"?
17. And what about Dolby 8-track decks and tapes?
18. What are the dimensions of an 8-track tape?
19. Players
   A. I have an 8-track that plays too fast; is there any remedy?
   B. What's the best method for cleaning 8T tape heads?
20. What were Elcasets?

ANSWERS

1. 8-TRACK TAPES ON THE INTERNET? ARE YOU KIDDING?

Up until the creation of alt.collecting.8-track-tapes on April 28, 1995, the only resources for those curious about the continuous-loop cartridge format called 8-track tape were stuck with a list of Beatles 8-tracks and a few home page

mentions of music collections. There was nothing that we could use. No definitive representation of American pop culture in the past 20 years would be complete without at least some mention of the ever-present 8-track tape. It's like people are ashamed to admit they ever bought one.

Well, as someone I know likes to say, it's not a CONTRADICTION, it's a PARADOX. What possible place could clunky old mechanical has-been 8-tracks have on the fast-paced, up-to-the-minute high tech Information Superhighway? I'm glad you asked. Well, I guess the first point worth making is that the Internet is really not all that much more modern than the 8-track. If you know your cyber history, you'll recall that the Internet emerged out of Arpanet, which was born in 1969, when 8-tracks themselves were still very young. Doubtless many a Defense Department computer scientist enjoyed those twin pillars of technological progress - email and endless-loop cartridges. While the sudden popularity of the 'net could scarcely be missed by anyone, perhaps you were not so aware that the 1990's also ushered in an 8-track renaissance. 8-tracks were rarely considered or discussed in the late 1980's except as a cruel joke, but the turn of the decade brought an accelerating interest in 'tracking which continues to this day. There is a fanzine, a feature-length movie, lots of attention from the mainstream media and even several brand-new independent releases available on 8-track. Countless numbers of 8-track fans worldwide have "come out of the closet" and let their 8-track interests be known. Many more have been introduced for the first time to the wonders of the endless loop. The Internet provides the means for these people to get together, as it does for so many other groups. But what about the rest of you, the ones who are reading this in amused or horrified silence? Well, 8-tracks have something to say to every computer user and most particularly to everyone who uses the Internet. Have you ever wanted to throw your computer out the window or against a wall? Have you ever been confounded by the sheer number and variety of things that can go wrong with your machine? Ever spent hours trying to tell if the problem was in the hardware or the software? Then you have something in common with the 8-track hobbyist. Imagine a product for which the only manuals available are old and increasingly hard to get. Imagine if every possible technical support number stopped answering the phone years ago. What, you say you don't have to imagine, that I have just described the plight of the computer user as well as the 8-tracker? My point exactly. Some 8-trackers are making a statement with which computer users cannot help but sympathize. What more eloquent protest against the forces which make consumer goods obsolete before they even go to market than buying your technology in thrift stores?

If you get nothing else out of a.c.8-t-t but the realization that there is more than one way of looking at the world, then you have gotten the point.

2. WHO INVENTED THE 8-TRACK TAPE?

[8TM - David Morton] The 8-track tape has roots that extend into the motion picture industry. Endless loop motion pictures were made from the 1920s on for advertising or other special purposes. With the appearance of inexpensive reel-to-reel tape recorders in the late 1940s, several inventors adapted the endless loop motion picture idea for use with the new German-style plastic recording tapes. Of these inventors, only one, William Powell Lear, gets much attention

Long before he set down to work on the famous Lear Jet, Lear had made a name for himself developing instruments and communications equipment for airplanes. In 1946 Lear Purchased a California company that had tried to market a steel-tape loop recorder based on the old Western Electric/AT&T Technology [from their 1933 "Hear Your Own Voice" endless loop recorders]. Bits of this technology made its way into his own design for several models of wire recorders announced in 1946, including an endless loop wire recorder. But Lear's early experiments did not result in a line of investigation that led directly to the 8-track. Instead, Lear dropped the project and subsequently was out of the loop for many years while he concentrated his efforts on aircraft.

In the mean time, the focus of endless loop technology shifted from wire to tape and from Lear's Chicago headquarters to Toledo, Ohio. There, Bernard Cousino, the owner of an Audio Visual equipment and service company, became interested in endless sound recordings. He won a small contract to build a "point of sale" device -- that is, a store display that played a recorded message over and over endlessly.

Cousino, aware of the widespread use of short motion picture film loops for similar purposes, began experimenting with an 8-millimeter endless loop film cartridge marketed by Television Associates, Inc. of New Hampshire. Cousino soon developed a cartridge specifically adapted for audio tape that he marketed in 1952 through his company, Cousino Electronics, as the "audio vendor." The little cart could be used with an ordinary reel-to-reel player -- the cart fit over one reel spindle and the exposed loop of tape was fed through the heads. Later, Cousino would develop the Echomatic, a more advanced two-track cartridge which, like the later 8-track, required a special player. In the meantime, another inventor named George Eash designed and patented a similar cartridge that came to be known as the Fidelipac. Following Cousino's pattern, Eash designed and patented a cartridge with similar specifications, later modifying it to include a more complex reel braking mechanism.

Eash's cartridge was the basis of dozens of commercial applications of the endless loop, two of which were particularly successful. Eash's Fidelipac design became the basis of several new recorders adapted for radio station use; by the early 1960s, many radio stations had put some

or all of their music, spot announcements, and station i.d.'s on carts that could be quickly inserted and played and which could be automatically stopped at the beginning of the recording.

The second main commercial application was in the field of auto sound. Earl "Madman" Muntz was a former used car salesman who became something of a local celebrity on the West Coast by opening a chain of television retail outlets selling TV sets that were manufactured by his other firm, Muntz Television, Inc. When he discovered the Fidelipac in the early 1960's, he threw in his lot with the endless loop, never to return to the television business.

Muntz had inexpensive Fidelipac players custom manufactured in Japan, and licensed the music of several record companies for duplication on carts. Even though the players were intended to be installed in cars, Muntz sought to enhance the appeal of his product by adopting stereo tape standards established by recorder manufacturers a few years earlier, and his players used the new, mass produced stereo tape heads being made for the home recorder industry by firms like Michigan Magnetics and Nortronics. These heads but two stereo programs, a total of four recorded tracks, on a standard 1/4 inch tape.

Muntz players caught on quickly, starting an autosound fad in California which slowly spread east. By 1963 Muntz players were to be found stylishly adorning the underdash regions of Frank Sinatra's Riviera, Peter Lawford's Ghia, James Garner's Jaguar, Red Skelton's Rolls Royce, and Lawrence Welk's Dodge convertible. During 1964 and 1965 a number of major labels began issuing new releases and old favorites on 4-track, and the Fidelipac looked like it was going to be the next big thing in consumer audio. A number of home players even appeared.

Suddenly Bill Lear appeared on the scene, newly world famous for his Lear Jet business plane, and announced in 1965 that he had developed a cartridge with eight tracks that promised to lower the price of recorded tapes without any sacrifice in music quality. Lear's enthusiasm for loops had not faded after the failure of his endless wire cartridge of the late 1940s. In 1963, he became a distributor for Muntz Stereo Pak, mainly in order to install 4-track units aboard his Lear Jets. Dissatisfied with the Muntz technology, he contacted one of the leading suppliers of original equipment tape heads, the Nortronics Company of Michigan. He specified a head with much thinner "pole-pieces" and a new spacing that would allow two tracks (or one stereo program) to be picked off a quarter-inch tape that held a total of 8-tracks. Although a departure from the Muntz player, the technology of the closely-stacked multi-track head was by the early 1960s well established in fields like data recording. Lear in 1963 developed a new version of the Fidelipac cartridge with somewhat fewer parts and an integral pressure roller. During 1964, Lear's aircraft company constructed 100 players for distribution to executives at the auto companies and RCA.

Just how Bill Lear got his products from the drawing board to the dashboards of Ford Mustangs and Fairlanes is a little unclear. Certainly Lear carried with him the cachet of his successful business jet project, and had many personal contacts in industry. And in a roundabout kind of way, he already had ties to Ford. In the 1930s Lear and his partner Paul Galvin had together built Motorola into a leading manufacturer of car radios, and Motorola was now affiliated with Ford.

Whatever the details of Lear's selling job, the keys to its spectacular success seems to have been the backing of both Ford and the recording industry. After getting RCA Victor to commit to the mass production of its catalog on Lear Jet 8-tracks, Ford agreed to offer the players as optional equipment on 1966 models. The response, in one Ford spokesman's word, "was more than anyone expected." 65,000 of the players were installed that year alone. The machines were initially manufactured by Ford's electronics supplier: the firm that had pioneered the mass produced auto radio or "motor victrola" -- Motorola.

Meanwhile, a number of new contenders rose up to enjoy fleeting moments of glory. Bernard Cousino, arguably the source of much cart technology, has rendered a seemingly endless succession of endless loop technologies. He had a measure of success with his Echomatic cartridge in the 1960s as a "point of sale" or educational audio-visual technology, largely by adopting Eash's strategy of licensing his designs to other firms. In 1965 the success of the Echomatic spurred the Champion Spark Plug company (a subsidiary of Ford) to purchase a controlling interest in the firm. At Champion's insistence, Cousino Electronics became a manufacturer of Lear-style players and was a major supplier for Sears Roebuck. Looking for greener fields, Cousino had in the early 1960s also linked up with Alabama entrepreneur and firebrand John Herbert Orr, whose Orradio Industries tape manufacturing firm (makers of Irish Brand tape) had recently been acquired by Ampex. Orr and Cousino cooked up Orrtronics, a company that made a background music system based on the old Echomatic cartridge. While Ford debated the adoption of the Lear Cartridge in 1965, Champion Spark Plug funded the development at Orrtronics of a competing system. This was the ill-fated Orrtronics 8-track, a remarkably better sounding but commercially unsuccessful response to Lear's cart. The Orrtronic cartridge had a somewhat different tape path that reduced strain on the tape and allowed better head-to-tape contact, and was somewhat more compact to boot. Nonetheless, no record companies seemed interested, and the idea was stillborn. Cousino continued to patent endless loop devices, such as a miniature cartridge and, now in his 90s, he has recently submitted a patent for an endless loop videocassette.

Endless variations on the endless loop cart appeared during the 1960s

and 1970s; a.c.8-t-t readers will undoubtedly continue to discover obscure cart formats. The best known, of course was the Playtape, a tiny cart introduced in the fall of 1966 which later re-emerged in slightly modified form as the basis of a Dictaphone Corp. telephone answering machine in the 1970s. Answering machines, in fact, were a major source of new endless loop variations from the 1960s on. The success of the Fidelipac in radio spawned a host of imitators, including both the well known Audiopak (which by the way is still being manufactured), the Aristocart made in Canada, the Marathon made by some Massachusetts firm, and the Tapex.

While carts themselves continued to be manufactured in the U.S., makers of 8-track players disappeared after only a few years. The manufacture of 8-track players shifted almost entirely to Japan between 1965 and 1970. There were a few valiant efforts to revive the flagging American industry, but to little avail as the foreign firms cranked players out in huge numbers using cheap labor. Nonetheless, Quatron, Inc., a Maryland firm, shone brightly for a few years making the now highly desirable Model 48 automatic 8 track changer, but its star soon faded. By the time the major record labels stopped offering new releases on 8-track, there were no domestic manufacturers of home or auto players.

3. A. WHEN DID THEY STOP MAKING 8-TRACKS?

The big labels who had 8-tracks out of the stores by 1983. The last 8-tracks were manufactured by the various Record & Tape clubs in 1988 (RCA & Columbia House). These tapes don't quite have the quality of prime 8-T craftsmanship, but watch your friends eyes bug out when you show them you have George Harrison's _cloud nine_ or Michael Jackson's _Bad_ on 8-track. The last Columbia Record Club 8-track we know of was _Chicago XIX_, which shipped in 1988Also, a few hungry young bands have put out homemade 8's recently of (mostly) alternative music.

It has been reported from one tracker that in Mexico 8-tracks abound. This tracker reports to have recently (1995) purchased some brand new Tejano, brought into the country illegaly.

3. B. WHY DID THEY STOP MAKING 8-TRACKS?

Consumer demand for the 8-track-tape format was strongest from 1970-74. The format began dramatically losing market share after 1975. IMHO, the reasons the format fell into disfavor are:

Audio industry improvements in the cassette format. During cassette's first few years, sound quality was mediocre, marred by tape drop-outs, wow and flutter, modulation noise, hissing, tape jamming, distortion, and poor frequency range. But in the early 1970s, cassettes were improved so that (potentially at least) their fidelity was equal to, or better than, 8-track... the major audio manufacturers put their R&D efforts into upgrading cassette.

The "high end" 8-track deck makers, Wollensak, Akai, Pioneer, and Realistic, stopped developing improved 8-track units around 1974. In fact, the short-lived Elcaset format received the R&D efforts that would have gone into better 8-track decks.

Manufacturers adopted cheaper, flimsier, less reliable cartridge mechanisms. Tape jamming and mechanical problems were a major "kiss of death" to consumer acceptance of 8-track....and these problems were entirely avoidable if the tape makers had maintained consistent design standards and quality control.

Relatively few decks, and relatively few 8-track-tapes, incorporated Dolby noise reduction. The Dolby-B system was widely adopted for cassettes during the late '70s, while very few 8-track decks incorporated Dolby circuits.

In short: the same industry that improved cassette tapes from a mediocre dictating-machine medium to a hi-fi music format, failed to offer and promote improvements for the 8-track format. Now they're trying to get rid of cassettes in favor of CDs...and then get rid of CDs in favor of HDCDs or the Smart Card.

RBENSLEY@GNN.COM

3. C. WERE 8-TRACKS POPULAR INTERNATIONALLY, OR ONLY IN AMERICA?

It's true that 8 tracks were only ever popular in North America, i.e., that it's the only place people ever really liked them.

However, they were made in many other countries. There are tons of UK carts, especially on the Island and EMI labels, and these tend to be of higher quality than US carts. Beatles and Pink Floyd carts, especially, sound a lot better than the US releases.

4. WHAT IS "8-TRACK MIND"?

8-Track Mind is the quarterly journal currently edited by Mr. Russel Forster of Chicago, IL. From its Statement of Purpose: "We of the 8-TRACK MIND are dedicated to our one pursuit: to keep analog alive (in whatever form) for the coming day of its ultimate victory. We will supersede all formats yet to emerge. We and our followers adhere to the doctrine of the 8-NOBLE TRUTHS OF THE 8-TRACK

MIND in all of our creative pursuits."

THE 8 NOBLE TRUTHS OF THE 8-TRACK MIND

0) Understanding one's fate leads to greater acceptance.
1) State of the art is in the eye of the beholder.
2) Society's drive is on attaining rather than experiencing.
3) In less than optimum circumstances, creativity becomes all the more important.
4) Progress is too often promises, promises, promises to get you to buy, buy.
5) "New" and "improved" don't necessarily mean the same thing.
6) "Naive" is not a dirty word.
7) In seeking perfection has the obvious been overlooked?
8) Innovation alone will not replace beauty.

The magazine features the always amazing Letters to the Editor section, frequently the largest section in the magazine, where trackers around the world unite in extolling the virtues of the endless loop cartridge; the rest of the publication is comprised of feature articles, fiction, art, and poetry from the vast cast of 8 TM writers, and PLUGS, a page of analog contacts provided in lieu of classifieds and other advertising.

At the time of this posting, the latest issue was #86, Fall 1995. Newcomers to 8TM are frequently surprised that this many issues have been published. The answer lies in the early history of the magazine: The first 68 issues of 8TM were the creation of Mr. Gordon Van Gelder. Van Gelder began the magazine in 1970 and was its editor until it went under in 1982, when its creditors took possession of its warehouse and took twelve years of back issues, which had been carefully preserved in polyurethane bags, and recycled them for newsprint (the creditors got $68.23 for them). The magazine was revived in Chicago in 1990 with issue #69 under the guidance of Van Gelder, his son Keith Van Gelder, Russ Forster, Dan Sutherland, Kari Busch and others. Due to internal turmoil at 8TM, by issue #74 Russ had taken over as editor/publisher with both Van Gelders leaving the magazine's staff.

It is published by 8-TM Publications, 8-Track Mind
P.O. Box 14402, Chicago, IL 60614-0402 Single issues are $3; subscriptions are $10/yr (make checks payable to Russ Forster).

5. HOW DOES AN 8-TRACK WORK, ANYWAY (WHEN IT WORKS...)?

An 8-track cartridge contains a length of 1/4 inch tape. The ends of the tape are connected by a metal foil splice, thus forming a loop. The tape itself is divided along its length into 8 channels, or tracks (hence the name). The playback head plays 2 of these tracks at a time - 4 programs in stereo. Inside the cartridge, the tape is wound around a central hub, or spool. Tape pulls out from the center of the spool. It moves to the top of the cartridge, where it connects with the playback head in the player through an opening at the top of the cartridge. A pressure pad in the cartridge presses the tape up against the playback head. The capstan (part of the player) is spun by the player's motor. As the capstan spins, it rolls the tape against the pinch roller in the cartridge. The capstan and the pinch roller move the tape along its path at 3 and 3/4 inches per second. The tape finally loops back to the central hub, where it rewraps around the outside of the spool. When the entire length of tape has gone through this loop, the metal foil splice in the tape passes by a solenoid sensing coil which is positioned right next to the playback head in the player. This moves the playback head along the width of the tape, and it starts to play a new program (remember, the tape contains 8 tracks, only 2 of which are supposed to be played at once).

From the previous description, it is probably pretty obvious why 8-track is so terribly prone to malfunctions. If you don't have a cartridge handy, get out a ruler. Dividing 1/4 inch into 8 separate tracks makes for very small tracks. Now think about the fact that the playback head has to pick up only 2 of those tracks at a time. When you further consider that the playback head itself moves all the time, virtually assuring that it will eventually become misaligned, it becomes painfully clear why 8-track so often produces crosstalk or "sound bleeding" from one program into another. The relatively complex path that the tape has to travel is another problem. This, combined with the fairly large number of moving parts in the cartridge, encourages tangling and tape backups. Since the capstan's movement regulates tape speed and movement, the somewhat tenuous grip that the capstan/pinch roller combination has on the tape sometimes leads to tape slowdowns, even if the motor is moving at a correct and steady speed (which it often isn't). Furthermore, the tape splice, the most vulnerable part of the loop, is put under constant pressure. Four times during the playing of each tape, the splice is pulled past the playback head and through the capstan/pinch roller wringer. This constant wear on the splice encourages it to split, which it often does. Lastly, the age of most 8-track cartridges means that some of the parts are likely to be decayed. Foam pressure pads and rubber pinch rollers are the most commonly decayed parts of an 8 track, but the adhesive used on the metal splice also tends to break down.

Abigail Lavine (abbot@pobox.com)

6. WHERE CAN I BUY 8-TRACK TAPES AND PLAYERS?

The only retail outlets that still sell new 8-tracks are truck stops in the mid-west and the west, but they're mostly country music titles (see answer #3). However, I did find a still-sealed Blue Oyster Cult track

at a truck stop in Texas in 1993! The only sources that remain for tapes and players are the usual: yard sales, estate sales, auctions, flea markets, thrift stores, etc. Also, let all your friends know (no matter how embarrassing) that you're collecting 8-tracks, and the word will get out. People will suddenly start giving you 8-tracks and players that they find in their basement, their parents' attic, etc. Run ads in the local paper; strike a deal with local thrift stores or flea markets telling them that you'd like to have first dibs on 8-track goodies; go to junk yards and look in '60 and '70s cars for still intact car players (also, a lot of junk yards pull the players out of the cars and offer them for sale separately). Also, use the Internet! Put the word out on alt.collecting.8-track-tapes, or run a free ad on the "8-Track Heaven" web page in the Classified Ads section (http://www.8trackheaven.com/buysell.html) and check out the dealers' page there as well (http://www.8trackheaven.com/resource.html)

And since Radio Shack (the last bastion of 8-track wares) dropped 8-track players from their catalogs a few years back, there is no commercial source for 8-track tape players. For years, rumors have floated around the 8-track community that vast warehouses of Radio Shack 8-track equipment sit quietly, somewhere, waiting for a well planned 8-track commando raid...

If you're lucky enough to live in New York City, though, Canal Street's many offbeat shops sometimes turn up new, in-the-box 8-track players. Otherwise, the above mentioned places apply.

Finally, check the back pages of 8-Track Mind magazine for current listings of dealers that may have tapes and/or players for sale. Happy hunting!

7. HOW CAN I FIX BROKEN 8-TRACKS?

In the olden, golden days, local music dealers or record & tape shops would repair 8-tracks for a small fee. These days, though, you gotta do it yourself. The Realistic 8-Track Cartridge Repair Manual is the best single source of instruction for repairing broken tapes. You can purchase a copy of this manual for $4 from:
Big Bucks Burnett
P.O. Box 720714
Dallas, TX 75372. (Write for availability first).

In 1996, anywhere from 15-25 years after most 8-tracks you find will last be played, there are going to be problems playing most of them again unless you do a few things to prevent breaks and chewup.

As far as the player is concerned, you will have to clean the heads and roller as well as you can to eliminate buildup of residue. You would also do well to have a head demagnitizer (which is available at any radio shack).

As far as the tapes, when I get a new one, especially a tape I really care about, I DON'T STICK IT IN THE PLAYER. I open the cart and make sure the tape rolls the way it's supposed to and that the spool closest to the center of the wheel hasn't risen above the rest of the tape making the tape coming from the center harder to come out (and easier to fold). Opening CBS/Columbia & GRT carts are the easiest (just don't break the tabs), the black Warner and Capitol(easiest tab to break) carts are a little harder, and the RCA carts are next to impossible without a drill, however the RCA carts are the most well developed and reliable.

Once you make sure the tape is rolling correctly, you need to find the foil tape that splices the tape together. I have a deck with fast forward that I can set to eject at the end of the program. This is the best way to handle it. Once you find the foil, replace it with new foil and reinforce it on the back with splicing tape (both items easily found at your local radio shack). You have now made the splice the strongest part of the tape.

As far as the pads, again depending on the manufacturer, you may need to replace them. Older CBS, GRT, WB, & all Capitol pads will need replacing. By '79 or '80 (earlier for CBS), the pads were made of a spring-like foam that will last indefinitely (as opposed to the earlier gooish pads). Again, RCA & earlier Atlantic carts have actual metal spring pads that do the best. You may need to re-glue the felt pads onto the metal springs. If I'm out of pads I have scavenged from non-desirable tapes, I use auto weather-stripping with scotch tape on the outside cut to fit the tape area. This can be found at any auto parts store.

As far as rollers, you are okay unless you have an older ('60s - early '70's) tape with the gooey roller. Replace those immediately because even if they seem okay, they're not.

If you throw away any 8-tracks, be sure to scavenge them for rollers, pads, spools or even the shell itself because it always helps to have spare parts around.

If you do what I described above, your 8-tracks will be as reliable if not more so than the so-called 'superior' formats in mass production today. Since I've adopted this method, I've never had a tape break and I've eliminated 'ghost tracks' or hearing another programs on the listening program. If the record companies had cared a little more in the outset, the 8-track wouldn't have had such a lousy performance reputation. But we all know what they're about (and it's not whether their product is reliable in the long term).
mcgriff@gnn.com (G. Allen)

7 A. HOW DO YOU REPLACE THE FOAM BACKING PADS ON TAPES?

The easiest way is to save the pads from old tapes and use them to repair others. If you don't have any old pads, you can also use a cut up sponge. Some people have had some luck using adhesive foam weather stripping from the hardware store. They usually have several different widths/thicknesses/stiffnesses to choose from. Take out the old pressure pad, scrape off the old deteriorated foam from the stiff plastic backing and stick on the new weather stripping (the adhesive makes this very easy). You can then trim the weather stripping to the correct size and put a piece of Scotch Magic tape on the top side of the weather stripping where it will contact the backside of the tape. The Magic tape provides a smooth surface for the tape to pass over."

You also may use felt pads (for underneath ashtrays, etc.) to replace the foam pad of a tape. This felt pad already has a self stick backing and the cost is @1.00 for an entire sheet!

7 B. HOW DO YOU REPLACE THE METALLIC SENSING STRIP?

This is one of the most common repair jobs with 8-tracks. The metallic strip is located at the splice that holds the two ends of the tape together, and this is where tapes often break. And sometimes the foil strip just wears out without breaking, causing the same track to play over and over. Radio Shack still sells rolls of the foil sensing tape, believe it or not. You can get a small roll for a buck or two, and it's already cut to the proper width for 8-track tape. Just use a razor blade to cut a piece to the correct length. It's adhesive on the back and attaches to the existing tape easily. Make sure you put the metallic tape on the shiny side of the tape (the side facing the playback head) or it won't work!

w.bishop@popmail.csuohio.edu sez:

I have been repairing 8-Track tapes for 20+ years and the best foil replacement for the track changers are 1) foil gum wrappers - best is Wrigleys. 2) Very low-grade aluminum foil (not heavy duty). This can be found at generic-type grocery stores. This is glued on by a very thin coating of clear silicone sealant. I have found this fix to last indefinitely!

**NEW: Joe Nechanicky Joe_Nechanicky@ms1.Mankato.MSUS.EDU sez:
To get a clean break over the sensing foil part of the recording, after the cart has been recorded, I will pull out a bit of tape and use my hand held bulk tape erasure to go over about four inches each side of the foil strip. That erases the music on both sides of the foil and makes for a nice "factory fade out/in" as the tape changes tracks.

Another tip, to get the capstan to grip better, I take a small fourth inch dowel and tape to the end of it a piece of scotch bright green scrubbing pad, then with the capstan turning I take the dowel and make up and down movements on the capstan,this will put a crosshatch pattern on the capstan and make it grip the tape like you wont believe. The pattern will wear away as the tapes are played, so the process will have to be repeated occasionally.So far I haven't noticed any negative problems from doing this, however you wont find me doing it on my best open reel deck. Also, when I have a cart apart I will take the pinch roller out and clean it off good with lacquer thinner.. it cleans the graphite off so the back side holds the tape better as it moves past the pinch roller. some people may feel lacquer thinner and rubber don't mix, but it sure does the trick,I suppose a person could use some other cleaner also as long as the pinch roller is cleaned.

ON REUSING THE EXISTING STRIP:

I have had good success in reusing the old metal splice tape by regluing it using diluted contact cement. I dilute the cement about 1:1 with contact cement thinner just because otherwise it tends to be a bit lumpy. Apply it to both the back of the metal foil and the surface of the tape where the foil will be with a toothpick or small sliver of wood. Make sure it is smooth and let dry. When dry stick the foil back onto the tape and rub around it (I use my finger) to remove any excess glue. I also reinforce the back of the tape behind the splice with scotch tape although I know regular splicing tape is much better. It is actually easier to do the reinforcement first to keep the tape in line before regluing the splice.

I've been doing this for a while and it seems to work well so far. The idea of resticking every tape as you get them is an excellent one too. I didn't do this in the beginning and had half of them break the first time they played. It's much easier to splice an unbroken tape by pulling it out of the cartridge slightly rather than opening up the whole thing although of course you can't change the foam this way. My 2 cents worth.

Robin Moore

7 C. HOW CAN I OPEN THE CART WITHOUT DAMAGING IT?

Malcolm says: There are many different types of cartridges, and they each need a different approach. The easiest are Columbia TC8 carts; if you have one of those, just pull the 3 little tabs back on the back side of the cart, which will allow the cart to snap open easily. It can be closed the same way with no damage to the cart. Most other carts require
a small amount of damage to get open. It's just the reality of the cart design: they were not designed to be opened once sealed.

Jeff Economy says: My favorites are TDK and Capitol blanks ("In the beautiful box"); they actually have screws to open 'em up! The TDKs are also especially nice as they have this little anti-jamming device inside that keeps the tape locked when it's not in play. Unfortunately the foil strip is prone to peeling off.

7 D. HOW TO OPEN AN AMPEX/LEAR JET CARTRIDGE

by Abigail Lavine

Why is it that Ampex, the absolute last word in audio tape for the serious professional, consistently produced 8-track cartridges with pinch rollers which turn to gummy goo? It's true. 9 out of 10 Ampex/Lear Jet cartridges have dangerous and unusable melted rubber pinch rollers. And on top of that, the carts are especially difficult to open in order to replace the roller. But with a little bit of work and foresight, you can create a kit which will make opening them oh so much easier. I learned the secrets I'm about to share from 8-track repairman extraordinaire Joe Wally, of Wally's Stereo Tape City (see Resources and Dealers). The man is a professional. Literally. He's been repairing 8-track tapes as part of his job since before some of the people reading this were even born. Joe Wally uses an ordinary kitchen knife, a hex screw driver or socket set, and two specially prepared hex head screws. The first step is to force the kitchen knife into the seam between the two sides of the cartridge shell at the top, near where the tape is exposed and the pinch roller is visible. Pry the two sides apart a bit. Now turn the cartridge over, so the label is face-down and you can see the five little holes on the back. The middle hole is slightly larger than the others, and this is the one to attack first. You'll need to have a hex head tapping screw which is just slightly larger than the middle hole. When you find the correct size screw, hacksaw the sharp end off of it. While you're at it, find a slightly smaller screw, one that's a little bit bigger than the four smaller holes, and saw the end off that one too. Now screw into the middle hole until the two sides of the shell begin to separate. Move on to the four smaller outside holes one at a time. The two sides should spread apart. At the end, you can remove the screw in the middle. Before you completely pull the two sides apart, BE SURE TO TURN THE TAPE OVER ON THE TABLE SO THAT THE LABEL IS FACING UP. That way the spool of tape inside will stay in its path. Change the pinch roller and do whatever other repairs may be necessary. In the end, the two sides should go back together with a little effort, or a few raps from a mallet, or with great care in a workbench vise.

7 E. IS THERE ANY HOPE FOR AN 8-TRACK IN WHICH ALL OF THE TAPE IS JUST IN A BIG PILE (UNTANGLED)? IS THERE ANY WAY TO SPIN IT BACK ON THE REEL?

Yes.
By hand.<deep sigh>

I'll assume it broke at the splice, and that you have all requisite parts, know what they look like, know where to put them, and have a new piece of foil track switching tape (or can reuse the old). Brace yourself, and let's get to work...

Make sure you know which end is the beginning. If unsure, wind it on a reel-to-reel reel, find a low-tension r-r machine (any track arrangement) and play it back. You'll get multiple tracks, but should be able to distinguish forward from backward.

Put the empty hub on some convenient spindle, and start hand-winding, with the beginning of the tape at the inner circumference, oxide side facing out. Wind CLOCKWISE. Leave about 3-4cm of the beginning end sticking up.

Keep going until you're done <big sigh>.

Holding the body of the hub (NOT the tape pack), gently pull the tape end (the end--at the outside of the pack) until friction happens, or the pack rotates as a whole. This removes excess slack. Don't make it too tight!

Test tension: Pull beginning end (center of pack) outward, along its length a little bit. If it fails to pull out easily, the pack is too tight. If it falls out sideways, the pack is too loose. This judgement (as well as tightening & loosening techniques) requires practice. I can explain no further here.

Put the hub back in the shell, thread the tape per usual. Add/remove outer turns to get the correct length to make the splice (err on the side of too loose).

Splice, add foil, reassemble, test.

7 F. HOW DO I FIX TAPE TENSION PROBLEMS (AKA "TAPE BINDING"?)

You can usually fix tension problems quite easily by opening the cart and lubricating the two hubs. A little Vaseline on a Q-tip does the job nicely. Lift the reel out careful so the tape doesn't twist up, and lift out the usually rubber wheel and lightly lube the two posts that they spin around, the hub for the rubber wheel being the more important of the two.

Larry Blumenfeld jblumenf@bcpl.net
adds:

Your cart's dragging could be a very simple fix. Columbia's final version carts all used a small wheel rather than everyone else's full size wheel, and it wasn't very friendly to a lot of players. Most likely, your cart has

three tabs, one at the top and two on either side at the bottom. A small Philips screwdriver or something similar can be inserted into the holes in the bottom, move the tabs back (away from the direction they're seated) and the cart opens right up. If you attack it too forcefully and break the tab, you can still stick the halves together with tape. Once you have the cart open, there are two places you need to lubricate (The best lube is some stuff I got at Radio Shack with Teflon in it - it won't migrate around inside the cart and it's super slippery). First is the hub that the wheel rides on. Just a tiny amount will do. Make sure it goes on the hub that the roller rides on and doesn't get on the rubber outside part. The second spot is the hub that the tape platter rides on. Again, make sure the lube goes between the turning part and the spindle. This is a good time to check the foam pads, though with the Squeeze tape they're likely ok. Everything in place? Close the cart back up (back end first, then the front tab). Try it now. Better? You fixed the problem! Not better? The tape's too tight on the platter...but that's another story.

Happy trails,
Larry B.

7 G. MY TAPE JAMMED IN THE PLAYER -- NOW PART OF THE TAPE IS CRINKLED LIKE AN ACCORDION. CAN I FIX IT?

OK, here is the definitive fix for crinkled tape:

Do NOT cut or throw away any tape!
Get your iron and set it on low to medium heat
and hold the tape between your hands with about 6 inches of crinkled tape between them. Slowly drag the crinkled tape across the edge of the iron.

NOTE: keep even tension on the tape being heated, NOT so much as to stretch the tape, and not so little as to let it stick to the iron. Move the tape slowly back and forth across the edge of the iron and the crinkles should disappear.

This procedure takes PRACTICE, and you will have to experiment with the heat of your iron, the iron must not be too hot or the tape will be damaged. Start low, and work the heat up until its right. If the heat is too low, no damage will be done. Too hot, and you'll know it pretty quickly.

I would highly recommend that you start with a tape that you don't care about, until you have the timing and heat figured out. I do this regularly, and the results are fantastic, no loss in sound or quality, and the tape plays just fine, with no gaps in the music! Good luck. TJZA00C@prodigy.com ("Quad" Bob Herndon)

I discovered another way to Iron out crinkled tape: Take a coffee cup, fill with boiling water, then take the crinkled portion of the tape and press it against the side of the coffee cup and smooth out with your fingers or thumb. A piece of cloth on the finger side of the process will keep finger oil from getting on the tape. The coffee cup should be of the ceramic type not Styrofoam. I had just recorded something and put in the cart into the player when the tape jammed and crinkled up, I had also just made a fresh cup of coffee and the cup was nice and warm, so I tried the above and it got 90% of the wrinkles out. The cup shouldn't have a taper to it- the fix really worked slick ! Joe Nechanicky (Joe_Nechanicky@ms1.Mankato.MSUS.EDU)

7. H. MY TAPES HAVE "WOW AND FLUTTER." WHAT CAN I DO?

Joe Nechanicky (Joe_Nechanicky@ms1.Mankato.MSUS.EDU) says "First,
I made sure that:
The tape was wound in proper fashion
The tape was not too loose nor to tight
The tape was threaded properly in the cart
The pinch roller was clean and free of graphite from the back of the tape
The pinch roller was lubricated and did not drag
The pinch roller was true and round
The platform was lubricated and turned freely
That nothing was binding as the tape turned.
That the tape was in good condition
The tape in the assembled cart had "normal" drag
Made sure the capstan in the players/recorders were clean and dry
Made sure all other tapes played well in the same players/recorders

All of these things indicated the cart/machines were in great shape, but a few carts still had bad "slipping"

Here is what I did to correct the problem. As you know, the tape cartridge is held in place in the player with a kind of a roller and spring arm mechanism. Some players use a piece of spring steel some use a coil spring attached to an "arm" Some of these function better than others.
I felt the problem was due to the cart not being held in place tight enough to cause good pinch roller to capstan contact. I thought perhaps increasing the tension on the spring arm in the player would be the answer however I only had the problem with a few carts so I didn't want to alter the tension as I was afraid I would possibly apply to much tension to other carts which already played fine.. (plastic bearings cant take much pressure) I took a look at the problem carts and could not find any signs of unusual deformities or abnormal wear on the plastic where the tension arm fits. My conclusion as to what happens is the bearing of the pinch roller wears and the cart now has to set inside the player further to make good contact. That works fine as long as the tension arm can compensate. I have found there are limits to the "automatic adjustment" of the tension arm. After looking over all the possibilities, here is what I decided to do:
At hardware or building supply stores, you can get thin aluminum sheet metal known as "flashing material" its used on roofing work. I am not sure of the thickness, but it has to be about 1/64 of an inch or so, perhaps thicker. This material can be cut with a scissors,

so it is easy to work with. I cut a small piece, about a fourth inch square, and trimmed it to fit into one side of the V slot of the cartridge. The metal piece goes on the side where the tension arm roller presses up against. I applied super glue first on the V grove slot where the metal was placed. I applied pressure for a moment then trimmed the metal part with a small file from a hobby file set I bought from Radio Shack. Small files are available from other sources to, but perhaps not as convenient to obtain as Radio Shack. I filed off the top of the aluminum near the side of the cart, so the roller of the tension arm would glide over and down easily. The extra tension created by the piece of metal shim worked perfectly.

I. HOW THICK SHOULD REPLACEMENT PADS BE? I USED 1/4" THICK BLACK WEATHERSTRIPPING WITH A NICE PERFECTLY SIZED PIECE OF CLEAR SHIPPING TAPE ON THE TOP.

1/4 " is too small IMO. Proper foam should be (and height is crucially important here!) 8 mm (sorry yanks but your silly outmoded idiosyncratic system of measurement don't cut it when small or logical gradations are required) in height, and (this is much less important) 4.5 cm length and (again this is less important than the height) 6.5 mm, though 7 mm is fine as is 6 mm. Now, assuming you are using backing material for the foam plus a slick material on the top for the tape backing to glide against, the toal should be 9 mm in height, so make sure that your backing material plus slick tape on top together add up to no more than 1 mm. Also, the material of the foam is very important.

J. SOME OF MY TAPES DRAG!

While this may be due to improper pad material or improper pad height, in general, drag is usally more due to tension problems and should be checked out and ruled out before proceeding. Drag is your tape's way of saying "help me, help me, human friend, I have a thorn in my paw." Remove that thorn and you have a friend for life.

K. HOW CAN I OPEN TAPES

Just a question of method. For EVERY tape design there is a safe and harmless way of opening them. The only problem, if there is one, is that on some of them, basically just the ones you mention, you cannot putthem back together again without taping them shut (though I once found a copy of JT _Passion Play_ where the guy had used a soldering iron and melted the plastic back together at the seams, kinda overkill, if you ask me, besides, tape is easy to remove if you ever have to open up the cart again).

RCA (rivet type)

a. rivet type that must be drilled
    1. drill carefully through the centre of the rivet til open
    2. remove ex-rivet and any plastic dust or junk
    3. file smooth if necessary
    4. remember tabs at the spine when putting back together
    5. seal shut with 3M Magic Tape on the sides
b. rivet type that doesn't have to be drilled
    1. with large flathead screwdriver, priy open at gaps behind the sprung steel felt tabs
    2. do #1 as gently as possible, eh?
    3. rivet can optionally be replaced with actial screw for future repairs

As for RCA non-rivet types (the vast majority of excellent RCA Music Club issues, e.g.) these are molded shut all along the seams, except for a gap underneath the sprung steel/felt pads. That's where you stick in a large flathead screwdriver and pry open gently. Once it has started to open, use a smaller flathead screwdriver to slide along the lightly molded seam of the rest of the cartridge body. Slow and gentle should have the tape open without any damage to the cartridge at all.

Avoid ALL problems before they start, in general, but also it's almost inevitable that someday you will need to go inside on one of these three types of RCA carts, so why delay the inevitable? Eventually you will need to learn the safest and best way to open these puppies, especially since the high quality of the RCA tapes makes it well worth the effort and time to learn.

Another easy way to fix these carts is to take a dremel tool, use the cutting wheel attachment, grind a slit straight accross the stud & waa-laa, the stud turns into a screw that is easilly removed (and re-installed) with a flat head screwdriver. i have fixed countless rca carts like this. i too, also aggree that these were the best designed carts of that time as well as having the best quality tape used.

8. **CAN I SELL OR TRADE MY 8-TRACK TAPES ON ALT.COLLECTING.8-TRACK-TAPES?**

Sure! Just post a list of 8-tracks for sale, including artist, title, condition of tape, whether it's sealed or not, and the price (or you want list if you're just interested in trading). Of course, don't be surprised if you get flamed if your prices are too high! A lot of trackers are against treating 8-tracks as collectors items, like LPs and 45s. Of course, it's inevitable that certain tapes will become sought after for one reason or another, but perhaps there's a happy medium we all can live with.

However, an even better place might be the Web site, "8-Track Heaven," which has a classified ad section for buying, selling, and trading 8-tracks and players. (see question #16).

9. **WHAT ABOUT THAT 8-TRACK MOVIE....?**

"So Wrong They're Right" is a 92-minute documentary shot on 16 mm film encapsulating a 10,000 mile journey around the U.S. in search of a group of 8-track fanatics, or 'trackers' as they have been dubbed in the pages of

_8-Track Mind" Magazine, which serves as the principal inspiration for the film. SWTR follows the travels of "8-Track Mind" Editor Russ Forster and fellow 8-track enthusiast Dan Sutherland in search of other 8-track minds. The result is over 20 interviews which delve in to reminiscences, rants, political diatribes, fantasies, fix-it tips, sales pitches, and everything else defining the skeptical yet inquisitive mind of the '90s 8-track enthusiast. It's not a film about nostalgia, as some might suggest; rather, it serves as a statement of outrage from a population of consumers who are tired of being told what to consume.

CREDITS:

Producer, Director, Sound Recordist, Editor: Russ Forster
Cinematography, Lighting: Dan Sutherland
Sound Mix: Jerrell Frederick
Soundtrack Music: Lary 7, Wally Pleasant, Bob Jordan, Mr. Bucks, Duane Thamm Jr.
And a cast of dozens

HOW TO SEE IT:

VHS Video copies are available for $25 from
8-TM Publications, 8-Track Mind
P.O. Box 14402, Chicago, IL 60614-0402
Make checks payable to Russ Forster.

10. ARE MY 8-TRACKS RARE OR VALUABLE? HOW CAN I TELL HOW MUCH THEY'RE WORTH?

Sorry, but there isn't a guide to what is worth how much in the 8-track world. The short answer would be: "They are worth whatever somebody will pay for them." Flea market and thrift stores still sell carts for anywhere from 5 cents to a buck, but collectors are driving up the prices as we speak. For example, John and Yoko's _Wedding Album_ on 8-T will net you about as much as the vinyl version. A copy of the aborted second collaboration with Frank Sinatra and Antonio Carlos Jobim (which didn't even make it to test pressings in vinyl) is so scarce that the owner of one told _Goldmine_ he wouldn't part with his "for at least $5,000". (8-Track Mind #81) Then, there IS Mr. Bucks from Texas who managed to sell a copy of the Sex Pistols' _Never Mind the Bollocks_ for $100 and _Cloud Nine_ by George Harrison for $150. To counter this, another copy of _Never Mind the Bollocks_ was recently sold for 1 cent by another collector fed up with these high prices!

Anyone who's really curious or wants an authoritative voice to back a hunch might want to find a price guide of pre-recorded tapes (or a single artist guide in the prerecorded tape section) for some idea. The Official Price Guide series covers this area rather nicely and is readily available in most parts of the country. However, keep in mind that the prices listed are for mint or very good condition. If your cart has been through the mill, and you can usually tell just by looking at them, don't expect to get rich.

Of course, all this about the Official guides being the easiest to find is based on a gut feeling, since that's the only one I've found in this area. The guide to the Beatles is an interesting read, since it places most of the Fab Carts at $15-25 in mint. It also verifies that the last ever Beatles solo 8 was George Harrison's Cloud 9, and that even in good condition (in grading terms good) it can net you $40. It does place the complete Wedding Album set (mint) at $75, although I did see someone trying to sell one in Goldmine at the aforementioned $200+

If you are unsure about the collectability of your collection, just say "make me an offer" when you're ready to sell.

11. WHY DO 8-TRACKS BREAK AND/OR JAM SO EASILY?

The main problem of breakage is the sensing foil, which serves double duty by holding the loop together at the splice. Like any adhesive tape, it becomes not quite as adhesive as time wears on. The best thing we've run across to remedy this is placing a piece of Mylar splicing tape (they still sell it at Radio Shack) on the reverse side of the tape section with the splice. This will reinforce the splice, making it the strongest section of the tape.

Tapes jam because the carts, over time, are exposed to heat or are abused in other ways. The tape becomes packed and will no longer move smoothly. Also, the tape can stretch due to heat exposure, causing uneven portions of the tape loop. Tapes that have been sitting for a long time, especially in shrink wrap, can be worse than old, well used tapes because of the heat factor. The players can also be the problem here; a player with dirty rollers or heads can cause excess drag on the tape, causing it to jam. Another problem is the dreaded "black gunk" [see answer 12] which, once it is introduced into the player, can cause all future tape to jam up. Cleaning the player regularly with tape head cleaner will help.

12. WHAT IS THAT BLACK GUNK WHERE THE PINCH ROLLER SHOULD BE?

That, my friend, is one of the most dreaded of 8-track ailments - what you're lookin' at is 8-track tar. Rubber pinch roller breakdown.

Petroleum by-product soup. Bad news for your player, so look out! Check the pinch roller carefully before you stick a new tape in your player. If your thumbnail leaves an impression in the rubber that doesn't spring back, then replace the roller. But maybe I'm getting ahead of myself here. Does everyone know what an 8-track pinch roller is? It's that little wheel that the tape slides over. You can see it when you look in the top openings of a cartridge, sort of off to side. Anyway, it's a very good idea to have spare rollers around for emergencies. Actually, since pinch rollers come in such a variety of sizes, you can never have too many spares on hand. Buy tapes you hate just for the parts and don't throw away broken tapes that still have working parts. If your player has fallen victim to tar, you'll almost certainly need to take it apart and clean it out with a solvent like alcohol or acetone. An ounce of prevention and all that...

Abigail Lavine (abbot@pobox.com)

(**NEW!!) KenGAce KenGAce@aol.com sez:

Guess what. I found an ideal substitute for the the gooey rubber washer. Your local hardware store may sell a power tool called an oscillating spindle sander. It's used for sanding down the inner edges of holes. The sandpaper tubes fit over rubber hose-like tubes (usually available in various diameters). The smallest diameter is 3/4" (important) and the length is 4 1/2". Ryobi makes such a spindle sander (P/N 4610810) and sells these rubber spindle replacements as well (about $3 to $4). You have to wrap about 2 to 3 layers (evenly) of masking tape strips around the plastic cart wheel to widen the diameter for better tape contact; and trim it accordingly. Next, cut the rubber spindle with a sharp razor EVENLY to the correct length of the wheel. Slip the rubber tube section over the plastic wheel and clean it off. Make sure the rubber tube is on the wheel evenly and not riding on the raised platic edges! It worked for the ones I just repaired! You can repair about 5 to 6 tapes with one rubber spindle. Good Luck!

13. WAS ANY PUNK ROCK RELEASED ON 8-TRACK?

[8TM - Mr. Bucks] Think about it...punk surfaced in America in the late-mid '70s, which was the heyday of the 8-track era. For three or four years a lot of good punk and alternative bands found their way onto our favorite format. Along with the Sex Pistols, there were 8-track releases by Television, Patty Smith, Devo, The Ramones, Gary Numan, Elvis Costello, The Stranglers, and the B-52s just to name a few.

Others punk rock and new wave artists releasing 8-tracks were The Dead Boys, Blondie, The Clash, The Diodes, The Fabulous Poodles, The Runaways, The Jam, The Police, Iggy Pop, The Plimsouls, The Records, The Revillos, The Talking Heads, The Undertones, the Vibrators, the Pirates, and just about every New Wave and punk band that managed to land a major record deal.

14. WHAT'S THE DEAL WITH QUADRAPHONIC 8-TRACKS?

DEFINITION:- QUADRAPHONIC SOUND: Quadraphonic audio (aka Surround Sound) adds rear channels (aka Surround Channels) to stereo audio reproduction. Quad reproduces spatial characteristics and effects unobtainable from two-channel playback. Quadraphonic audio attempts to re-create subtle spatial "you are there" acoustic clues, and in some cases puts the listener literally "in the middle" of a performing ensemble, with musical instruments playing from all four directions

DESCRIPTION - QUAD-8 TAPE CARTRIDGES (QUAD-8): QUAD-8 cartridges resemble Stereo-8 cartridges. QUAD-8 tapes allocate tape tracks differently, combining tracks 1, 3, 5, and 7 to Program 1 and combining tracks 2, 4, 6, and 8 into Program 2. QUAD-8 cartridges contain a small vertical notch in the top left corner, so the QUAD-8 player can automatically set up the proper program/track configuration.

Unlike the various quad LP formats, which used matrix or demodulation schemes to retain full compatibility with existing stereo record players, QUAD-8 cartridges provide "discrete" four-channel audio. QUAD-8 cartridges won't properly reproduce on a Stereo-8 player, but QUAD-8 players can reproduce Stereo-8 cartridges.

QUAD-8 PLAYBACK EQUIPMENT DESCRIPTION: QUAD-8 players have special tape
heads and circuitry which contacts the correct group of four tracks, and produces four discrete (separate) channels of audio output. QUAD-8 players also can play Stereo-8 tapes, but QUAD-8 tapes won't satisfactorily play in a conventional Stereo-8 deck.

Prominent makers of Quad-8 decks include Akai, Panasonic, Pioneer, Wollensak, Electrophonic, Realistic, and Sanyo. However, some combination 8-track player/receivers prominently trumpet simulated quadraphonic sound (i.e. "quatravox", "quadradial", "4D", "quad matrix"). Some of these "impostor" Quad decks even have 4-channel joysticks! Unless a player is plainly labeled QUAD-8, Q-8, or DISCRETE QUADRAPHONIC 8-TRACK, the unit won't play Q8 tapes in discrete quad. The "pseudo-Quad" decks merely provide simulated surround sound from regular Stereo audio - they lack playback heads designed for QUAD-8. playback.

MUSIC TAPES: RCA and Columbia far exceeded other companies in terms of QUAD-8 tape releases. Other companies committed to significant numbers of QUAD-8 releases include A&M, ABC, Command, and Warner Group (Elektra/Nonesuch/Asylum Records). Curiously, very few QUAD-8 titles were issued by EMI (Capital Records/Angel), by Decca/London, or the Polygram labels. QUAD-8 tapes on the Polydor, Mercury, Decca/London, Philips, and Deutsche Grammophon labels are extremely rare.

CHRONOLOGY: Introduced in the fall of 1970, shortly after the initial appearance of quadraphonic open-reel decks and tapes, QUAD-8 tapes were available a year before the initial quadraphonic vinyl LP records appeared on the market.

Some of the earliest QUAD-8 tape releases were "remixes" from older multi-track stereo releases. Among the initial RCA QUAD-8s: the 1964 soundtrack to "The Sound of Music" and the 1962 Reiner/Chicago Symphony album of Strauss' "Also Sprach Zarathustra." After 1971, most QUAD-8 releases were albums specifically mixed down for quad playback, often with truly stupendous (if controversial) aural effects.

QUAD-8 tapes generally retailed for $1 more than Stereo-8 tapes. Part of this additional cost reflected the greater volume of tape jammed into a QUAD-8 cartridge, to offset playback time lost due to elimination of two programs. A few QUAD-8 releases were issued on two cartridges, or had some editing.

QUAD-8 tapes were unsuccessful commercially. Some explanations for this are:

*The public resented the industry's Quad LP "format wars". the lack of a uniform and high quality Quad LP system would tarnish acceptance of all Surround Sound home formats for many years.

*Some equipment makers cheapened product quality in order to provide Quad capability at a price comparable to regular stereo. The resulting low-fi audio systems, with cheaper amplifiers, cut-rate tape transports, and mediocre speakers, turned off many prospective buyers from Quad sound.

*QUAD-8 cartridges were somewhat less convenient than Stereo-8 cartridges. Instead of four programs, there were only two programs. QUAD-8 playback decks were about 30% more expensive than Stereo-8 decks, and very few record decks had QUAD-8 record capability. Maximum playing time was half that of Stereo-8.

*QUAD-8 cartridges used thinner tape (similar to double-play 90-minute Stereo-8s), increasing the risk of tape print-through and mechanism jamming.

*The Arab Oil Embargo of late 1973/74, and the corresponding price inflation, drastically curtailed consumer discretionary spending. In the United States and other industrial countries, consumers struggled to buy gasoline and other inflation-impacted necessities. They ignored costly frills such as Quad sound equipment.

QUAD-8 releases peaked out during 1973-74, and sharply declined by 1976. The final commercial QUAD-8 tape release, in 1978, apparently was Isao Tomita electronic synthesizer performance of Holst's "The Planets" on RCA's Red Seal label. (This also was the final CD-4 Quadradisc LP title).

COLLECTING QUAD-8 CARTRIDGES: QUAD-8 tapes have become something of a "holy grail", as these tapes have become very scarce. Titles from EMI and Polygram labels (i.e. Pink Floyd's "Dark Side of the Moon") are exceptionally hard to locate in QUAD-8 format. If you seriously collect QUAD-8s, build a network with other collectors, share "wish lists", and make trades when you locate desirable tapes.

Ron Bensley hucb46a@prodigy.com

More on quad:

Quad 8-track was more successful at home than in the car. Almost anyone who made home decks had a quad version. The biggies - Sony, Akai, Pioneer, Wollensak, Technics and others - also made quadraphonic RECORDERS. into quad is even more justification for being into 8 tracks than otherwise. Quad 8 track and open-reel are the only true discrete 4-channel sources around...almost everything else is just matrixed into two channels.

For vinyl, the CD-4 (aka Quadradisc) format had the rear channel information stored at high frequencies on the record, and required a special cartridge that worked up to 50,000 Hz in order to play the records back in quad. The rear channel info was MATRIXED onto the record - just like FM stereo, only doubled. Discrete to me means four channel source - period. CD4 was a two-channel source with the other two piggybacked on top - and by the way, never really worked well. The theory is: Left channel F + L channel R on one side, normal frequencies; LF minus LR on upper frequencies. Added (LF+LR + LF-LR) gives you LF only; Subtracted (LF+LR minus LF-LR) gives you LR only. Same goes for the right channel. At least that's how it was supposed to work. Trouble was, the act of playing the record several times shaved off the already-fragile upper frequencies. And that's assuming the record was pressed perfectly to begin with! People talk about conspiracies and such, but one of the reasons quad failed first time around was not just the multitude of technologies - it was because a lot of them never worked properly. Give me quad 8's and open reels any time - no decoding, no demodulating - just 4 separate tracks. Boy, just imagine what a quad CD could have been like!

15. WHAT ABOUT 4-TRACK TAPES?

[From "You Really Got Me," copyright 1994 by Doug Hinman] Four-track and 8-track cartridges coexisted on the marketplace for some time, with

the 8-track format eventually defeating by attrition its look-alike cousin (before in turn being overtaken by the cassette format). Although extremely similar in appearance (the only obvious difference between the two being a large hole in the top left underside of 4 tracks), the two formats were not at all compatible, having been developed and marketed by two different and competing factions. The 4-track system was refined and marketed as a car accessory by Madman Earl Muntz, a west-coast used car dealer looking for something he could offer as an accessory to boost his used car sales. His marketing and distribution arrangements were spotty at best, relegating the 4-track format to the inferior (when compared to 8-track) status of a regional phenomenon, most popular in such locales as California (Muntz's home base) and Florida, but unpopular or unknown in many other areas.

Originally developed in 1956 (also in conjunction with Ford Motors), the 4-track format was originally forsaken as unmarketable, and lay dormant until the early '60s, when enterprising Earl Muntz saw its potential. He acquired rights to the format and began marketing both hardware (players) and software(prerecorded tapes), licensing music from major record labels. It was perhaps Earl Muntz's initiative that rekindled Ford's interest in offering an in-dash tape cartridge system. The development of the 8-track format took the basic 4-track technology and refined it, making changes designed to make the tape less likely to jam while playing, and to increase accessibility to individual selections on the tape. In the 4-track format, the pinch roller (the wheel that moves the tape along as it plays) was housed in the player. In the 8-track system, the pinch roller was housed in the cartridge itself. The two programs of the 4-track format were like the two sides of an LP, each holding roughly half the total program material. For the next few years, the two configurations contested for consumer allegiance. New titles continued to be released on both, and the two look-alike formats were often marketed side by side in retail outlets. Despite 4-track's potential to deliver better sound quality, it was the 8-track format that eventually dominated. Not the least reason for this was Ford's de facto endorsement. The physical similarity between 4- and 8-track cartridges permitted the development of converters that fit into the increasingly obsolete 4-track players and enabled them to play 8-tracks.

Ad Copy from a 1968 Muntz Ad for 4-track car players: "The bold and powerful new 1968 Muntz M-45 car stereo system is one for the road -- anytime, anywhere! Muntz M-45 has a lot more going for it than great looks. It's got tomorrow's great automatic features, including convenient controls for separation, track selection, volume, tone and reject. And, maximum performance is guaranteed by the increased power of the new, twin solid-state amplifiers. Here's full-range response for you in a strong, masculine unit that is set in a brilliant chrome finish and is accented by the recessed black-grain panel surface. It's groovy! Muntz also spotlights the world's greatest cartridge entertainment -- 100,000 titles featuring the greatest stars in music. Today's greatest sounding cars have been stereoized by Muntz, and we've fixed it so that you can drive home with The Beatles, The Mamas and The Papas, Buck Owens, Frank Sinatra and Nancy Sinatra, Dean Martin, The Beach Boys, Petula Clark, or any one of today's brightest stars.

It boils down to this: Muntz is the best sound on wheels."

16. WHAT ABOUT THE 8-TRACK TAPE WWW SITE, "8-TRACK HEAVEN"?

"8-Track Heaven," the World Wide Web site for 8-track tape aficionados, went on-line on July 20, 1995. You may reach it by pointing your web browser to:

http://pobox.com/~abbot/8track/

This site is edited and maintained by Malcolm Riviera. The site was originally created by Malcolm Riviera, Chip Rowe, and Abigail Lavine, but contributions from all net trackers are welcome.

On the page you'll find four main sections, plus the "8-track of the Moment" feauture that profiles a particularly fine cart. The four sections include pages on the following: 8-Track Mind magazine; downloadable 8-track icons (for Windows) and Wallpaper (Windows); articles on 8-track porn; history of the 8-track; how the 8-track works; this FAQ; stuff on 4-tracks and PlayTapes; an 8-track hall of fame; sound bites; how to repair tapes; reprints of articles about 8-track tapes; GIFs of cool 8-track covers; links to 8-track related sites; resources for buying 8-tracks and players; diagrams and photos of 8-track pioneers; and a classified ads section where you can buy, sell, and trade tapes.

Abbey is constantly adding new and cool stuff, and the page has one several net distinctions, including a reference from HotWired and a Cool Site of the Day. Check it out today!

17. WHAT'S THE DEAL WITH DOLBY 8-TRACK DECKS AND TAPES?

(Note: "Dolby" and the "double-D" symbol are trademarks of Dolby Laboratories Ltd.).

During the mid-1960s, audio engineer Ray Dolby developed the Dolby Type-A noise-reduction system, which has been utilized extensively in professional recording studios ever since (although for it is

becoming superceded by the improved Dolby Type SR system and, sigh, various digital recording systems).

In 1969, Ray Dolby responded to inquiries from various audio experts to develop a simpler, cost-effective, but high-quality noise reduction system for consumer tape decks. This system, known as Dolby Type B, was designed to provide relatively dependable record/playback performance from tape decks running at the slow tape speeds (1 7/8 ips and 3 3/4 ips) of cassette and 8-track tapes, respectively. Dolby-B dramatically reduces high-frequency "tape hiss", providing a relatively quiet tape background.

The first Dolby-equipped consumer 8-track decks appeared in late 1971 from Akai and Wollensak. Other makers offering Dolby-equipped decks included Pioneer, Realistic, and Technics. A small number of compact combo stereos (combining 8-track deck, stereo receiver, and turntable with matched speakers) included Dolby.

Of the major tape duplicators, only Columbia had a really strong commitment to encoding 8-tracks with Dolby. Columbia began Dolby-encoding of cassettes in 1971 and Dolby-encoding of 8-tracks in 1973. As a result, hundreds of the most common 8-track titles (from the various CBS labels) feature Dolby-B encoding.

Other 8-track tape manufacturers (Ampex, GRT, Capitol Records, RCA, MCA, Warner) neglected to offer the benefits of Dolby encoding to their customers. Curiously, some Canadian RCA 8s are Dolby-encoded while their US counterparts are not. Had Dolby-encoding become more widespread on 8-tracks, it's likely that the format's "planned obsolescence" would have been postponed several years.

By Ron Bensley, RBensley@gnn.com

18.WHAT ARE THE DIMENSIONS OF AN 8-TRACK TAPE?

5.25" x 4" x 0.8" (approx.)

19. PLAYERS

A. I HAVE AN 8-TRACK THAT PLAYS TOO FAST; IS THERE ANY REMEDY?

It's most likely a problem with the player, not the tape. If your deck has a fast forward (ffwd), it's possible it's stuck on high speed. If that's not the problem, open it up (the player, not the tape). There may be a speed control somewhere in the area of the motor. Just follow the motor wires back to the pc board. If there is a variable resistor in that area, give it a try. A small screw driver can be used to turn the control.

Another possibility is that someone changed the drive belt on the player. The "new" belt may be the wrong size (diameter), and thus change the speed of the drive wheel.. If the large wheel has a slot for the belt, and the replacement belt is not running inside the slot, the speed will be altered. This goes for the drive wheel on the motor as well. I had one that ran too fast, turned out it had the wrong belt. You may need to buy a replacement belt; also, rubber bands are a cheap replacement and often work fine until you can find a real belt. The diameter I'm referring to is the cross section of the belt. Some are flat, sqr, round, and sometimes this cross section is very important.

Joe Nechanicky (Joe_Nechanicky@msl.Mankato.MSUS.EDU) sez:
While it is true that some DC motors have an external speed regulator and are easy to adjust, many home eight track decks have motors which are similar to many car stereos, in that they have a built in mechanical speed governor.(some home units have small AC motors without any governor or speed regulator) Inside the DC motor is a set of contact points,(some have two sets) one point is attached to a small weight and the other is semi fixed. The semi fixed side has a screw adjustment which sets the motor speed. The screw can be accessed only by taking the motor apart so speed adjustment is a hit or miss till the proper adjustment is made. Only a fourth turn at a time is all that is needed to bring up or reduce the speed as needed. taking the motor apart can destroy the brush assembly if you are not careful, and even then taking apart a motor can be tricky. I can give detailed instructions on how to take apart the motors and adjust speed/clean the comutator etc, however that's not the purpose of writing at this time. Most player speed adjustments can be done without taking the motor apart. For the decks running to fast, I have placed a flat belt over the flywheel to build up its dia so the wheel will turn at a slower rate. Flat belts are available in many cross section thickness, start with a thin belt first and increase the cross section size till the necessary results are achieved. I have also used thick 16 MM projector belts on the flywheels and even flat vacuum cleaner belts may work if you find them in the proper dia.and size It is possible to double up the belts to double the thickness, however I have found that this may cause an out of roundness and not be desirable.If the deck is running to slow, The following process works. In order to increase the speed of the capstan, the dia of the motor pulley needs to be increased. I have found a very small increase in the size of the motor pulley will make a big difference in speed on the capstan, in contrast, while adding dia to the fly wheel for reducing speed the speed changes are more gradual. The best way I have found to add dia to the motor pulley is to slip a piece of plastic heat shrink tubing over the motor pulley(cut to size) then heat to shrink . This forms a perfect round surface without seams. In most cases, one

layer of shrink tubing ups the speed enough that a person may need to counter the increase by a thin belt over the flywheel. If a person has other pulleys available in a junk box it also could be tried to find one which would fit and be a little bigger dia instead of using the shrink tubing. How do you know what is the right speed, well if you dot have test equipment you can go by ear from a song you are familiar with. If you have test equipment, here is what I have done. On a known deck, preferably one with a good heavy duty AC motor, and one which speed is known to be good, I have made a test tape recorded at 3KHZ.(monitored with a frequency counter) Then when I check speed on an deck in question, I play back the test tape and monitor its frequency on a frequency counter- when the corrected speed shows 3KHZ on the frequency counter, I know the speed is correct. I also have a Nortronics test 8 track alignment tape which has calibrated tones on it, however there is no proof that that is accurate, so I use a good known deck to make my test tape on. Most wow and flutter problems if not corrected by a new belt are a result of poor brush contact inside the motor. The motor needs to be taken apart and cleaned. On a good note, the brushes seem to last forever, but if the motor is not used for a few years, tarnish builds up and causes erratic operation. One last thought, it must be remembered if a person records their own tapes, to determine which device, the player or recorder is at fault with its speed is off... a recorder running to slow will produce a tape which sounds to fast on a player running at the right speed.A recorder running to fast will produce a tape which sounds slow on a player running at the right speed. Check both player and recorder first to determine which is off speed- both may be off....one way or another. I have found no players or recorders are perfect on speed even when thy were new. The only ones which seemed near prefect were recorders or home units with AC motors as the line frequency determines RPM (along with windings) Hope someone out there can use this information.

B. WHAT'S THE BEST METHOD FOR CLEANING 8T TAPE HEADS?

The best results are obtained from cleaning the heads with commercial tape head cleaner and Q-tips. Distilled de-ionized alcohol is a OK, too. Make sure you clean the capstan, too, which is the metal rod that presses against the tape's pinch roller. The capstan picks up a lot of crap over time and if you don't clean it regularly your tapes will start snagging on it and making a huge mess.

Those tape head cleaning cartridges are another option, but most of them are pretty crappy, and the head cleaner/Q-tip method is vastly superior.

20. WHAT WERE ELCASETS?

Well - it is neither an 8-track nor has it the advantage of 'endless playing' but it fits into that time - and shared the 8-track fate.

In the early 70's Sony decided to roam the market with their brand new development: the ELCASET. They combined standard-1/4-Inch tape-material with a Philips-like mechanism operating at the same speed of 9.5 cm/s which 8-tracks use. Their intention: easy handling (like the cassette) and wide-range audio features (like reel-to-reel), saving costs (they use the same tape like 8-tracks and reels). But: they failed. It was too late - the Compact Cassette (CC) was already there and rolling up the market. They had a variety of equipment available, home-desks and portables, where the home machines had about the size and look of standard front-loaded CC-recorders. There was a feature planned to adapt the ELCASET on a standard reel-to-reel machine. for example for studio works. It might have been a good idea - but wasn't.
The first units were presented in SONYs 1973 catalogue and last mentioned in that of 1975. I don't know any private person who ever bought or used one. I'm searching the flea-markets around my home-town for years now, but couldn't find one. At least I saw one - about 1979 in a HiFi-studio in Bielefeld, operational, working and for sale but in those days I weren't interested.

Peter H. Wendt <phw@compunet.de>

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